

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

| Work Order: _____ | | | | DISPOSITION | | AGAINST DEPARTMENT/PROCESS | | | | | | | | | |
|------------------------------|------|------|-----|---|--|--|--|---|--------------|--|--|--|--|--|--|
| | | | | Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/> | Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> | Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> | Water Jet <input type="checkbox"/> Prod. Eng. Coor. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> | Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> | | | | | | | |
| Part No. _____ | | | | | | | | | | | | | | | |
| NCR No. _____ | | | | | | | | | | | | | | | |
| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector | | | | | | |
| Doc/Data | | | | | | | | | | | | | | | |
| Equip/Tooling | | | | | | | | | | | | | | | |
| Operator | | | | | | | | | | | | | | | |
| Material | | | | | | | | | | | | | | | |
| Setup | | | | | | | | | | | | | | | |
| Other | | | | | | | | | | | | | | | |
| Process | | | | | | | | | | | | | | | |
| Supplier | | | | | | | | | | | | | | | |
| Training | | | | | | | | | | | | | | | |
| Unapproved | | | | | | | | | | | | | | | |
| FAULT CATEGORY | | | | | | | | | | | | | | | |
| Landing Gear | | | | General | | | | | | | | | | | |
| Bending | | | | Bend <input type="checkbox"/> | | | | Grain <input type="checkbox"/> | | | Ovalized <input type="checkbox"/> | | | | Pressure/Forced <input type="checkbox"/> |
| Centre Not Concentric to O/S | | | | BOM/Route <input type="checkbox"/> | | | | Hardware <input type="checkbox"/> | | | Over/Under tolerance <input type="checkbox"/> | | | | Temperature/Cure <input type="checkbox"/> |
| Cracks | | | | Broken/Damaged <input type="checkbox"/> | | | | Inspection Incomplete <input type="checkbox"/> | | | Part Incorrect <input type="checkbox"/> | | | | Weld <input type="checkbox"/> |
| Crushed/Crimped | | | | Burrs <input type="checkbox"/> | | | | Instructions Incomplete/Unclear <input type="checkbox"/> | | | Part Lost/Missing <input type="checkbox"/> | | | | Wrong Stock Pulled <input type="checkbox"/> |
| Cuffs | | | | Contamination <input type="checkbox"/> | | | | Maintenance <input type="checkbox"/> | | | Part Moved <input type="checkbox"/> | | | | |
| Heat Treat | | | | Countersink <input type="checkbox"/> | | | | Mislabeled <input type="checkbox"/> | | | Positioned Wrong <input type="checkbox"/> | | | | |
| Inspection Strip in Tube | | | | Cut Too Short <input type="checkbox"/> | | | | Misread <input type="checkbox"/> | | | Power Loss/Surge <input type="checkbox"/> | | | | |
| Ripples in Bend | | | | Drill Holes <input type="checkbox"/> | | | | Offset <input type="checkbox"/> | | | <input type="checkbox"/> | | | | Other <input type="checkbox"/> |
| Torque Waves in Extrusion | | | | Drawing <input type="checkbox"/> | | | | Out of Calibration <input type="checkbox"/> | | | | | | | |
| Turning Sequence | | | | Finish <input type="checkbox"/> | | | | Out of Sequence <input type="checkbox"/> | | | | | | | |
| Wave/Twist in Tube | | | | Folio <input type="checkbox"/> | | | | Outside Dimensions <input type="checkbox"/> | | | | | | | |

Work Order ID 96997

February-14-13 12:54:29 PM

96997

Page 2

Item ID: D2012-107

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: Clevis

Stop

NS2

Start Date: 2/14/13 **Start Qty:** 4.00

4

Cust Item ID:

Required Date: 2/22/13 **Req'd Qty:** 4.00

4

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

**Sequence ID/
Work Center ID**

**Operation
Description**

**Set Up/
Run Hours**

Tool ID

Tool #

**Plan
Code**

**Accept
Qty**

**Reject
Qty**

**Reject
Number**

**Insp.
Stamp**

130

130

Brake NC

NC BRAKE

0.00

4

Sp
13/05/21

Brake NC

Memo

0.00

140

140

QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

*Shp
BS 21*

4

150

150

Packaging

Packaging

Identify as per dwg & Stock Location:

0.00

STO3

Mh. 13/05/22

LG

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: Date:

QA Closed: _____ Date: _____

Work Order ID 96997

February-14-13 12:54:29 PM

96997

Page 3

Item ID: D2012-107

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: Clevis

Stop

NS2

Start Date: 2/14/13 **Start Qty:** 4.00

4

Cust Item ID:

Required Date: 2/22/13 **Req'd Qty:** 4.00

4

Customer:

Reference:

Approvals: Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2

**Sequence ID/
Work Center ID**

**Operation
Description**

**Set Up/
Run Hours**

Tool ID

Tool #

**Plan
Code**

**Accept
Qty**

**Reject
Qty**

**Reject
Number**

**Insp.
Stamp**

160

QC21- Final Inspection - Work Order Release

0.00

MW 13-05-23

160

QC

Quality Control

Memo

0.00

ME
13-5-22

NCR: Yes / No

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

| Work Order: _____ | | | DISPOSITION | | | AGAINST DEPARTMENT/PROCESS | | | | | | | | | | | | | | |
|--------------------------|---------------------------|------------------------------|---|---|---------------------------------------|---------------------------------------|---------------------------------------|---|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|--|---|--------------------------------------|---|-------------------------------------|-----------------------------------|
| | | | Rework <input type="checkbox"/> | Scrap <input type="checkbox"/> | Use-as-is <input type="checkbox"/> | Skid-tube <input type="checkbox"/> | Machining <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Crosstube <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Finishing <input type="checkbox"/> | Composite <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Prod. Eng. Coor. <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Supplier <input type="checkbox"/> | Engineering <input type="checkbox"/> | Quality <input type="checkbox"/> | Other <input type="checkbox"/> |
| Part No. _____ | | | Work Order Update <input type="checkbox"/> | | | | | | | | | | | | | | | | | |
| NCR No. _____ | | | | | | | | | | | | | | | | | | | | |
| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | | Initial Chief Eng | Action Description | | | Sign & Date | Verification | | QC Inspector | | | | | | | |
| Doc/Data | | | | | | | | | | | | | | | | | | | | |
| Equip/Tooling | | | | | | | | | | | | | | | | | | | | |
| Operator | | | | | | | | | | | | | | | | | | | | |
| Material | | | | | | | | | | | | | | | | | | | | |
| Setup | | | | | | | | | | | | | | | | | | | | |
| Other | | | | | | | | | | | | | | | | | | | | |
| Process | | | | | | | | | | | | | | | | | | | | |
| Supplier | | | | | | | | | | | | | | | | | | | | |
| Training | | | | | | | | | | | | | | | | | | | | |
| Unapproved | | | | | | | | | | | | | | | | | | | | |
| FAULT CATEGORY | | | | | | | | | | | | | | | | | | | | |
| Landing Gear | | | | General | | | | Grain | | | | Ovalized | | | | Pressure/Forced | | | | |
| Bending | Bend | Centre Not Concentric to O/S | BOM/Route | Cracks | Broken/Damaged | Contamination | Countersink | Heat Treat | Instructions Incomplete/Unclear | Maintenance | Mislabeled | Misread | Offset | Out of Calibration | Over/Under tolerance | Temperature/Cure | | | | |
| Crushed/Crimped | Burrs | Cuffs | Contamination | Crushed/Crimped | Drill Holes | Drawing | Drill Holes | Inspection Strip in Tube | Instructions Incomplete/Unclear | Maintenance | Mislabeled | Misread | Offset | Out of Calibration | Part Incorrect | Weld | | | | |
| Cuffs | Contamination | Heat Treat | Countersink | Heat Treat | Drill Holes | Drawing | Drill Holes | Inspection Strip in Tube | Instructions Incomplete/Unclear | Maintenance | Mislabeled | Misread | Offset | Out of Calibration | Part Lost/Missing | Wrong Stock Pulled | | | | |
| Heat Treat | Crushed/Crimped | Inspection Strip in Tube | Cut Too Short | Inspection Strip in Tube | Drill Holes | Finish | Drill Holes | Ripples in Bend | Instructions Incomplete/Unclear | Maintenance | Mislabeled | Misread | Offset | Out of Calibration | Positioned Wrong | Other | | | | |
| Inspection Strip in Tube | Ripples in Bend | Torque Waves in Extrusion | Drill Holes | Torque Waves in Extrusion | Drill Holes | Folio | Drill Holes | Turning Sequence | Instructions Incomplete/Unclear | Maintenance | Mislabeled | Misread | Offset | Out of Calibration | Power Loss/Surge | | | | | |
| Ripples in Bend | Torque Waves in Extrusion | Turning Sequence | Drill Holes | Turning Sequence | Drill Holes | | Drill Holes | Wave/Twist in Tube | Instructions Incomplete/Unclear | Maintenance | Mislabeled | Misread | Offset | Out of Calibration | | | | | | |
| Turning Sequence | Wave/Twist in Tube | | Drill Holes | Wave/Twist in Tube | Drill Holes | | Drill Holes | | Instructions Incomplete/Unclear | Maintenance | Mislabeled | Misread | Offset | Out of Calibration | | | | | | |
| Wave/Twist in Tube | | | Drill Holes | | Drill Holes | | Drill Holes | | Instructions Incomplete/Unclear | Maintenance | Mislabeled | Misread | Offset | Out of Calibration | | | | | | |

Picklist Print

February-14-13 10:44:29 AM

Page 1

Work Order ID: 96997

Parent Item: D2012-107

Start Date: 2/14/13

Required Date: 2/22/13

Parent Item Name: Clevis

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP: D 01.11.08 Re-format, Drawing to Rev. CSM
IPP Rev:E Now on Waterjet 06-06-13 JLM

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
| M304S16GA 304/316 Sheet .063 | | Purchased | No | | | 110 | sf | 589.7560 | 0.016 | 0.0073684 | | | |

| Location | Loc Qty | Loc Code |
|----------|---------|----------|
| MAT020 | 589.756 | |
| 122245 | 5.156 | |
| 123136 | 140.9 | |
| 124428 | 123.7 | 124428 |
| 124572 | 320 | |

Jn B-S-17

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

| Work Order: _____ | | | | DISPOSITION | | AGAINST DEPARTMENT/PROCESS | | | | | |
|------------------------------|----------------|---------------------------------|----------------------|---|--|------------------------------------|--|--|--------------------------------------|--------------|--------------|
| | | | | Rework <input type="checkbox"/> | Skid-tube <input type="checkbox"/> | Crosstube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | | Engineering <input type="checkbox"/> | | |
| | | | | Scrap <input type="checkbox"/> | Machining <input type="checkbox"/> | Small Fab <input type="checkbox"/> | Prod. Eng. Coor. <input type="checkbox"/> | | Quality <input type="checkbox"/> | | |
| | | | | Use-as-is <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | | Other <input type="checkbox"/> | | |
| | | | | Work Order Update <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> | | | | |
| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | | Initial Chief Eng | Action Description | | Sign & Date | Verification | QC Inspector |
| Doc/Data | | | | | | | | | | | |
| Equip/Tooling | | | | | | | | | | | |
| Operator | | | | | | | | | | | |
| Material | | | | | | | | | | | |
| Setup | | | | | | | | | | | |
| Other | | | | | | | | | | | |
| Process | | | | | | | | | | | |
| Supplier | | | | | | | | | | | |
| Training | | | | | | | | | | | |
| Unapproved | | | | | | | | | | | |
| FAULT CATEGORY | | | | | | | | | | | |
| Landing Gear | | | | General | | | | | | | |
| Bending | Bend | Grain | Ovalized | Pressure/Forced | | | | | | | |
| Centre Not Concentric to O/S | BOM/Route | Hardware | Over/Under tolerance | Temperature/Cure | | | | | | | |
| Cracks | Broken/Damaged | Inspection Incomplete | Part Incorrect | Weld | | | | | | | |
| Crushed/Crimped | Burrs | Instructions Incomplete/Unclear | Part Lost/Missing | Wrong Stock Pulled | | | | | | | |
| Cuffs | Contamination | Maintenance | Part Moved | | | | | | | | |
| Heat Treat | Countersink | Mislabeled | Positioned Wrong | | | | | | | | |
| Inspection Strip in Tube | Cut Too Short | Misread | Power Loss/Surge | | | | | | | | |
| Ripples in Bend | Drill Holes | Offset | | | | | | | | | |
| Torque Waves in Extrusion | Drawing | Out of Calibration | | | | | | | | | |
| Turning Sequence | Finish | Out of Sequence | | | | | | | | | |
| Wave/Twist in Tube | Folio | Outside Dimensions | | | | | | | | | |

| | | |
|-----------------------|--------------|-------------|
| DART AEROSPACE LTD | Work Order: | 96997 |
| Description: Clevis | Part Number: | D2012-107 |
| Inspection Dwg: D2012 | Rev: C | Page 1 of 1 |

FIRST ARTICLE INSPECTION CHECKLIST

First Article Prototype

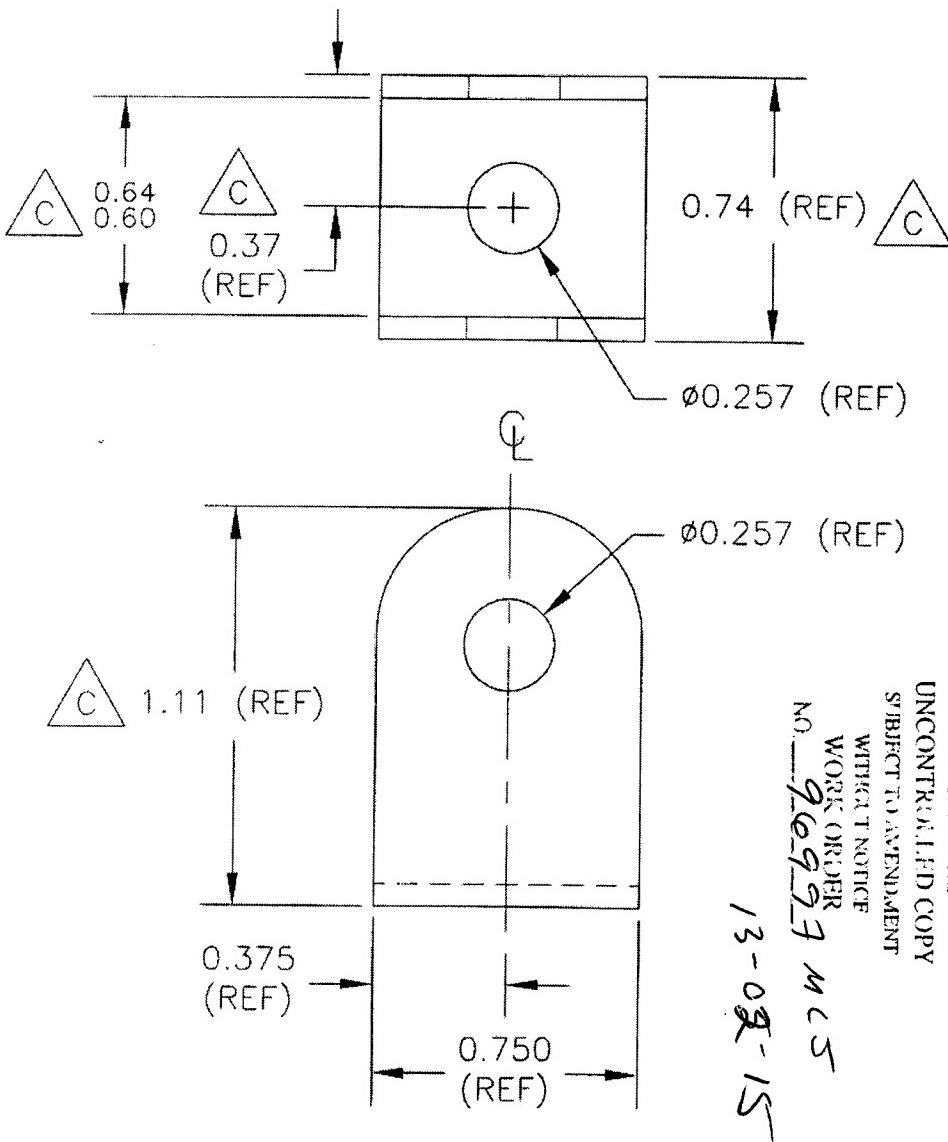
| | | | | | |
|--------------|-----------|-------------|------------|---------------------|-----|
| Measured by: | <u>Jm</u> | Audited by: | <u>Smp</u> | Prototype Approval: | N/A |
| Date: | 13-5-17 | Date: | 13-5-17 | Date: | N/A |

| Rev | Date | Change | Revised by | Approved |
|-----|----------|-----------|------------|----------|
| A | 07.02.02 | New Issue | KJ/JLM | SJL |



COPY ISSUE

| | | | |
|-------------------------------|--------------------------------|---|------------------------|
| DESIGN BW | DRAWN BY RF | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
| CHECKED <i>[Signature]</i> | APPROVED <i>[Signature]</i> | DRAWING NO. D2012-107 | REV. C SHEET 1 OF 2 |
| DATE 99.12.20 | | TITLE CLEVIS | SCALE 2:1 |
| A | 94.10.27 | NEW ISSUE | |
| B | 99.04.30 | ADD FLAT PATTERN | |
| C | 99.12.20 | 0.74 WAS 0.680 | |

RELEASED
99.12.20 D2012-107

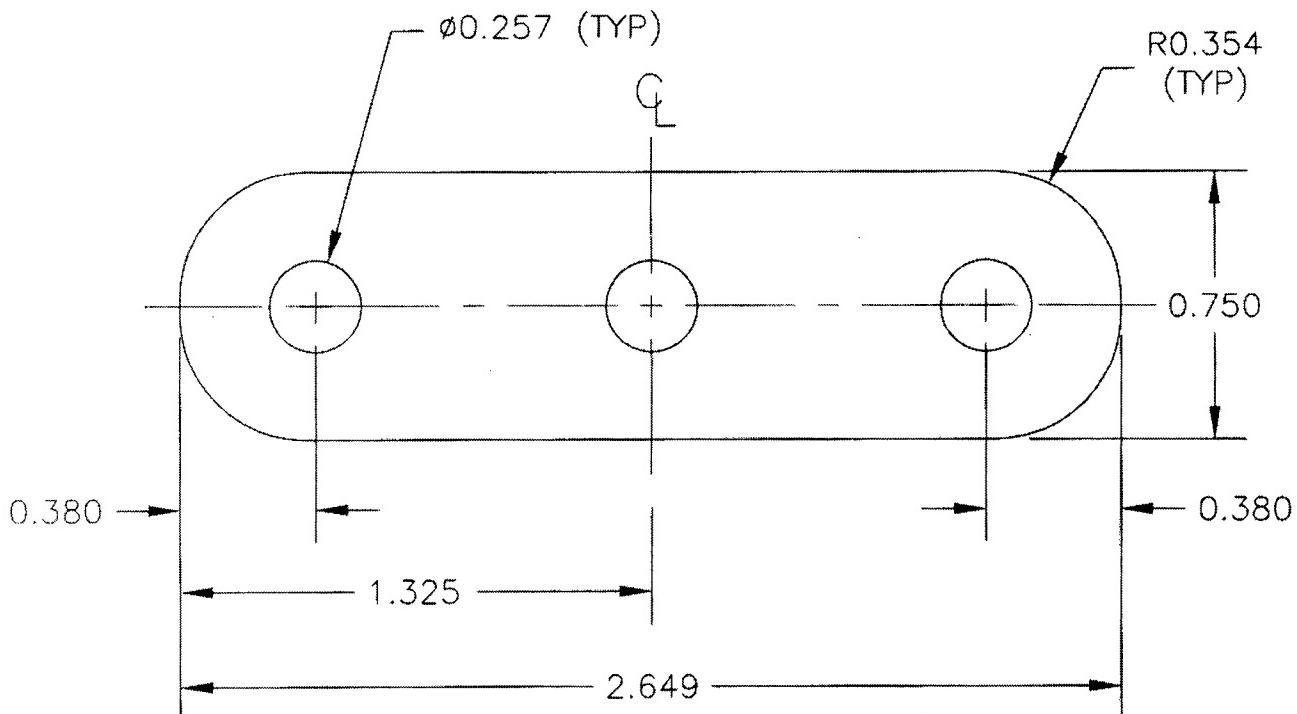
MATERIAL: AISI 304/316 SS 0.063 THICK
USE 0.032 BEND RADIUS
TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
ALL DIMENSIONS ARE IN INCHES



COPIES ISSUED
DRAFT

| | | | | |
|-------------------------------|--------------------------------|---|--------------|--------------|
| DESIGN BW | DRAWN BY RF | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | | |
| CHECKED <i>[Signature]</i> | APPROVED <i>[Signature]</i> | DRAWING NO. D2012-107 | REV. C | SHEET 2 OF 2 |
| DATE 99.12.20 | | TITLE CLEVIS | SCALE 2:1 | |

RELEASED
DO CI 04 05A



D2012-107 FLAT PATTERN

MATERIAL: AISI 304/316 SS 0.063 THICK
TOLERANCES ARE DART QSI 018 UNLESS OTHERWISE NOTED
ALL DIMENSIONS ARE IN INCHES

96952